Field Swabbing

1 Purpose

This document sets forth the procedures for conducting field swabbing and supplements the requirements of the FBI Laboratory *Quality Assurance Manual (QAM)* and the FBI *Laboratory Operations Manual*.

A common technique for collecting explosive residue samples in the field is by swabbing evidence, surfaces, and other items that are considered too large to send to the laboratory for analysis. These procedures detail the preparation of swab kits and describes the collection of residue swabs at post-blast scenes and other explosives-related search sites. These procedures do not describe the collection of explosive residue by other means such as soil samples, or vacuuming, the collection of evidence items containing residues, or the collection of precursor chemicals or bulk explosive samples.

2 Scope

These procedures apply to caseworking personnel conducting explosives chemistry and explosives and hazardous devices analyses who are involved in swabbing for explosive residue.

3 Equipment/Materials/Reagents

Equivalent equipment, materials, and reagents may be substituted as needed.

3.1 Equipment

- Heat sealer

3.2 Materials

- Ballpoint pens
- Cotton balls
- Cotton-tipped applicators
- Disposable forceps
- Disposable gloves (without powder preferred)
- Evidence Response Team (ERT) Evidence Collected Item Log (FD-886)
- Evidence tape
- Glass jars, 2 ounce
- Glass scintillation vials
- Heat-sealable bags (nylon preferred)
- Permanent markers, thick and thin
- Rigid containers (plastic box, paint can, cardboard box)
- Surgical drape or kraft paper

- Tyvek suits and boot covers
- Zip-top bags, various sizes

3.3 Reagents

- Isopropyl alcohol (70% commercial product)

4 Procedures

4.1 Swab Kit Preparation

4.1.1 The following steps for preparing a swab kit is an example only. Swab kits may be prepared in a manner to fit the needs of the planned swabbing activity (e.g., swabbing of surfaces at a suspected improvised explosives clandestine laboratory, swabbing for explosives residue at a post-blast vehicle bombing scene).

4.1.2 Kits must be prepared in advance, in an explosive-free area, and protected from contamination. All items will be handled while wearing disposable gloves.

4.1.3 Clean work surfaces thoroughly with an isopropyl alcohol solution or other appropriate solvent. Cover the clean work surface with a disposable material such as a surgical drape or kraft paper.

4.1.4 The recommended composition of a small-size swab kit is as follows:

Administrative supplies:

- 1 Ballpoint pen
- 1 Thin permanent marker
- 1 Thick permanent marker
- ~2'x2' Surgical drape or kraft paper
- 10' Evidence tape
- 24 Zip-top bags, 3"x5"

Personal Protective Equipment (PPE):

- Several Tyvek suits (in individual heat sealed bags)
- 10 pair Nitrile gloves

Swabbing and sampling supplies:

- 3 2-ounce glass jars containing 10 cotton balls each
- 10 Cotton-tipped applicators
- 12 Disposable plastic forceps
- 24 Small glass vials (scintillation vials)

4.1.5 All swabbing and sampling supplies (e.g., forceps, cotton-tipped applicators, glass vials) can also be grouped and sealed in zip-top bags within the kits for added protection against contamination. An alternate method to protect the materials in smaller search kits would be to

place items in a rigid container or heat-seal the entire swab kit in a vapor proof, heat-sealable bag (nylon preferred).

4.2 Swabbing Procedures

4.2.1 General Information

4.2.1.1 Refer to the FBI Laboratory ERT 12-Step Process for Scene Processing; swabbing should not be performed as a stand-alone process.

4.2.1.2 If safe to do so, swabbing and the collection of other trace evidence (e.g., hairs, fibers, DNA, latent fingerprints) should be conducted prior to the handling or collection of any bulk explosive or chemical materials (solids or liquids) or larger items of evidence (e.g., clothes, documents, weapons).

4.2.1.3 When feasible, disposable forceps will be used to handle swabs at all times.

4.2.1.4 Dry swabs (e.g., cotton balls, cotton-tipped applicators) will be used to collect explosive residue. Do not moisten swabs.

4.2.1.5 If possible, two individuals will conduct residue swabbing; one to perform the swabbing ("Collector"), and the other to carry supplies, open containers, and hold onto the collected, packaged swabs ("Assistant").

4.2.1.6 It is recommended that Bomb Technicians do not conduct residue swabbing due to the high probability of contamination from their clothing, especially if they have already performed a safety sweep.

4.2.1.7 A location should be selected to stage swabbing supplies and lay down the surgical drape or kraft paper to provide a clean work surface. Ideally it should be near where swab samples will be collected.

4.2.1.8 Once opened, the remaining items in the exposed swab kit cannot be used for evidence collection at other scenes because they may be contaminated.

4.2.1.9 When recommended guidance from this procedure cannot be followed (e.g., Tyvek not worn, forceps not used), it will be recorded and include the reason(s).

4.2.2 Personal Protective Equipment

4.2.2.1 Individuals conducting swabbing will wear appropriate PPE.

4.2.2.2 Disposable gloves are mandatory for swabbing operations; when practicable, Tyvek suits and boot covers will be worn.

4.2.2.3 The individual(s) will put on one pair of gloves first, then a Tyvek suit, then either change his/her gloves, or put on a second pair over the first.

4.2.2.4 All PPE should be donned prior to any search or swabbing procedures, and disposed of properly on scene (e.g., trash, biohazard).

4.2.2.5 Gloves will be changed often (e.g., soiled, damaged).

4.2.2.6 All PPE will be changed when search locations change (especially important when doing a remote search after working at a post-blast scene), and new control and comparison swabs will be taken (refer to sections 4.2.3 and 4.2.4 in this document).

4.2.3 Control Swab Collection

4.2.3.1 Control swabs will be collected prior to entering the search site.

4.2.3.2 New forceps will be used to remove one swab from the container and to directly put the swab into a small vial labeled with "swab control".

4.2.3.3 The Collector's and Assistant's PPE/clothing will be swabbed with separate swabs, rubbing the swabs over their gloved hands, front torso, and sleeves of their Tyvek suit (or if suits are unavailable, whatever clothing will be worn at the scene). These swabs will be placed into a vial labeled with "clothing/glove control" and the Collector's or Assistant's name (or initials), as appropriate.

4.2.3.4 Additional control swabs will be taken, as appropriate (e.g., work surface).

4.2.3.5 All control swab vials may be placed into a single evidence bag and entered into evidence.

4.2.4 Comparison Swab Collection (when practicable)

4.2.4.1 It is helpful for the FBI Laboratory to have an idea of what chemicals are originally present in the environment where the swabbing is taking place.

4.2.4.2 The Collector will swab an area of the scene that is reasonably expected to have been protected from the explosion, or, if in a possible synthesis location, an area that is not expected to have had chemicals mixed, cooked, or stored there.

4.2.4.3 The area swabbed should be one that would be exposed to the same general conditions as the area in question (e.g., same cleaning practices; same exposure to the weather, fertilizer, road salt, or other chemicals).

4.2.4.4 The number of comparison swabs will vary by scene and incident.

4.2.4.5 Each comparison swab will be placed in a vial labeled with "comparison" and include a description of the location swabbed.

4.2.5 Evidence Swab Collection

4.2.5.1 Swabs will be used to remove residues from items exposed to an explosion or

containing possible explosives-related residue (if the item itself cannot be submitted) using a circular rubbing motion.

4.2.5.2 Multiple swabs of the same item/area may be placed into the same vial. If the swabbed area does not leave a visible residue on the swab, it is good practice to collect a second swab and place into the same vial.

4.2.5.3 The best areas to swab are smooth, non-porous surfaces (e.g., metal, glass, painted wood, stone, plastic) that do not appear to be burned.

4.2.5.4 Surfaces facing the explosion are more likely to retain residues (e.g., street signs, light poles, adjacent vehicles, metal gates).

4.2.5.5 Swab areas are likely to have been touched by suspects, but keep in mind the possible destruction of other potential evidence such as latent prints or DNA.

4.2.5.6 If more than one large container of swabs is used, a "swab control" must be taken from each container (repeat step in section 4.2.3.2 of this document).

4.2.6 Labeling and Packaging

4.2.6.1 It is acceptable to simply label and close the vials while on scene, and seal with evidence tape after all swab collection is completed (this reduces the need to use tape at the search location).

4.2.6.2 Vials may be enclosed (individually or in small groups) in a zip-top bag for added protection or grouping; the bag will be sealed with evidence tape and initialed.

4.2.6.3 If more than one vial is included in the same outer bag or package, each vial must be individually sealed and labeled.

4.2.6.4 The evidence tape should not cover or obscure the labels on the vials.

4.2.6.5 Each vial or outer bag/container will be labeled with the appropriate information such as item number, description, location, date, Case ID, and the Collector's and when applicable, Assistant's or witness' names and initials.

4.2.6.6 All swabs, including controls and comparisons, will be recorded on the Evidence Collected Item Log.

4.2.6.7 Evidence (e.g., swabs, clothing) from different search locations will be packaged in separate containers and protected from breakage and cross-contamination.

4.2.6.8 For shipping, sample vials will be packaged in sturdy containers (e.g., paint can, box with packing material) to protect them from being damaged.

5 Limitations

Many extraneous factors could affect the residue remaining at a search location, such as weather, length of time before processing, and people in the area.

6 Safety

Safety protocols, contained within the FBI Laboratory Safety Manual, will be observed at all times.

Standard precautions will be taken for the handling of all chemicals including standard universal precautions for the handling of biological and potentially hazardous materials. Refer to the FBI Laboratory Safety Manual for proper handling and disposal of all chemicals. Personal protective equipment will be used when handling any chemical.

The handling of some explosive materials is hazardous due to potential ignition by heat, shock, friction, impact, or electrostatic discharge. Personnel should work with small quantities of material (such as a few grams) and properly store larger quantities in approved containers.

Crime scenes and search scenes related to explosion or explosives investigations can contain hazardous chemicals and devices. All search participants should be aware that secondary explosive devices, live ammunition, bulk explosives, and other hazards may be present at a scene. It is best practice for a Bomb Technician (or other qualified explosives expert) to perform a safety sweep of the entire scene prior to entry of evidence collection personnel.

7 References

FBI Laboratory Quality Assurance Manual, Federal Bureau of Investigation, Laboratory Division, latest revision.

FBI Laboratory Operations Manual, Federal Bureau of Investigation, Laboratory Division, latest revision.

FBI Laboratory Safety Manual, Federal Bureau of Investigation, Laboratory Division, latest revision.

ERT 12 Step Process, Federal Bureau of Investigation, Laboratory Division, Evidence Response Team Unit, latest revision.

Evidence Collected Item Log, Federal Bureau of Investigation, Laboratory Division, Evidence Response Team Unit, latest revision.

Rev. #	Issue Date	History
0	07/07/2006	Original Issue to follow QATU formatting and ASCLD/LAB-*International* requirements.
1	11/26/2007	Administrative changes for grammar. Changed section 7.1.3 from optional to mandatory. Addition and removal of items from section 7.1.7. Added sections 7.1.8, 7.1.9, and 7.2.2.1. Changed section 7.2.6.1 to an optional step. Updated references.
2	10/02/2017	Administrative changes for grammar and clarity. Removed and/or modified references to the Explosives Unit (EU). Updated sections 1, 2, and 3. Removed sections 4, 5, and 6. Revised swab kit preparation instructions in new section 4.1. Revised swabbing procedures in new section 4.2.

Redacted - Signatures on File

Approval

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Scientific Analysis Unit Chief Date: 10/02/2017

TL Approval

Explosives Chemistry and Fire Debris Technical Leader Date: 10/02/2017

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QA Approval

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